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Agriculture



Brassolaeliocattleya Wren

PHOTOGRAPH BY NEIL MCDADE

Rivermont
ORCHIDS

SIGNAL MOUNTAIN, TENNESSEE

General Information

Our Physical Location and Personnel

Rivermont Orchids is located atop Signal Mountain, near Chattanooga, Tennessee. We have 75,000 square feet under glass devoted entirely to the culture of orchids. Our laboratory, offices, warehouses, potting and shipping departments occupy an additional 25,000 square feet of space. We regularly employ more than thirty-five persons on a full time basis.

Valuable Stud Plants Used By Experts

The heart of our business is a very fine and extensive collection of stud plants from which we hybridize the finest seedlings available. In planning our hybrids we rely upon an advisory board composed of cultural and genetics experts. Members of this staff are connected with the leading educational institutions and botanical gardens in the United States and are noted for their contributions to orchid research.

Satisfied Customers Everywhere

Most of our business is conducted through the mail and we have satisfied customers in every state of the Union and in many foreign countries. We welcome personal visits anytime during the year. Our business hours are from eight until four Monday through Friday, and from eight until twelve Saturday.

Our Monthly Lists Are Our Real Catalog

This informational bulletin is issued to acquaint you with Rivermont and our stock. It should not be considered a catalog in the general sense. There is a current offering included with this bulletin. We issue similar offerings once or twice each month throughout the year. We constantly offer groups of plants that are ready for sale within sixty days and our year-round lists make a much more thorough offering than we could provide in a catalog. We will make special offerings at any time plants are required which are not to be found in our regular lists. Your name will be placed on our mailing list for a year without obligation if you are not already receiving our offerings.

We Guarantee Satisfaction In Every Transaction

Amateur Inquiries Warmly Welcomed

This year we proudly present our home growing information and orchid cultural bulletin, which we believe will answer many of your questions. Other inquiries are welcomed and will be given prompt personal attention. Since our plant sales income depends primarily upon amateur growers with a few plants, do not hesitate to order regardless of the smallness of your collection.

Agents

Mr. and Mrs. Joseph Peacock of Ashcroft Orchids, 19062 Ballinger Way, Seattle, Washington, represent Rivermont in Seattle and the surrounding area. Customers are at liberty to order from Ashcroft Orchids or direct from Rivermont, whichever is more convenient for them. Mr. Harry T. Otake, of Otake Orchid Nursery, 585 "J" Road, Damon Tract, Honolulu, Hawaii, represents Rivermont exclusively, for the Territory of Hawaii.

Plants

Parent "Stud" Plants

Parent plants in the famous Rivermont collection are valued from \$200.00 to many thousands of dollars. These plants are used primarily for repeating proven crosses, breeding new hybrids and for the production of exhibition flowers. Very few are offered for sale, but divisions (with a minimum of three bulbs) and established back bulbs are offered as they become available.

Cattleyas and Allied Genera

The most familiar orchids are cattleyas, laeliocattleyas, brassocattleyas, and other cattleya combinations such as brassolaeliocattleya. That's what we mean by cattleyas and "allied genera." We abbreviate the foregoing in our lists as C., Lc., Bc., and Blc.

If you are interested in growing good sturdy plants which will produce beautiful corsage type orchids, you will find them in Rivermont's monthly offerings.

The term "seedling" includes all sizes of plants from tiny beginners in flasks to individual plants of ready-to-bloom size. A plant is considered mature when it blooms. Depending upon the natural vigor of a seedling and the cultural attention it receives, a seedling may bloom between the age of three and one-half to seven years.

Community Pots

The smallest plants we list for sale are in community pots, containing a minimum of ten well established plants each. We do not sell seed or seed flasks.

Larger Seedlings

Our larger seedlings are in individual 1-3/4" to 5" pots. No matter what size you purchase you may be sure of well potted, healthy stock.

Botanicals

If you are interested in little "botanicals" (small native species) which produce unusual foliage and unique blooms, we can provide some from stock and all others through our Hawaiian agent.

Mature Cattleya Hybrids

This category includes a large portion of the finest plants we offer for sale. There is a wide selection in parentage, price and color. Among these plants are many that should produce blooms of exhibition quality. The final determination of exhibition quality is made by individual judges in flower shows. Since standards vary from locality to locality, no grower can guarantee exhibition quality. Many awards have been conferred upon plants in this collection. Some famous hybrids of which we have large blocks or groups are:

- C. BOW BELLS (C. Edithiae x C. Suzanne Hye)
- LC. DERRYNANE (Lc. Balkis x Lc. Princess Margaret)
- C. GENERAL PATTON (C. Angus x C. Gloriette)

- LC. SNOWDRIFT (Lc. Cynthia, var. Model x C. Annette, alba)
- LC. DERNAL (Lc. Nugget x C. Dowiana aurea)
- C. BOB BETTS (C. Bow Bells x C. Mossiae, Wagneri)

- C. JEAN FAIRCLOTH MacARTHUR (C. Gretchen Merrill, var. Purity x C. Minnehaha, var. Rivermont)
- LC. TRIGLAV (Lc. Windermere, var. Clovelly, A.M., R.H.S. x C. Titrianae)

- C. CHICKAMAUGA (C. Ardmore x C. Thetis, var. Rivermont)
- C. EDDIE RICKENBACKER (C. Mossiae, var. Bergenfield x C. Thetis, var. Rivermont)
- LC. WILMOSS (C. Mossiae, var. Bergenfield x Lc. Helen Wilmer)

- LC. TIASTRIAN (Lc. Asbury, fine variety x C. Titrianae)
- C. MARY SCHROEDER (C. Eucharis x C. Gretchen Merrill, var. Purity)
- BLC. JANE HELTON (Blc. Xanthea, fine variety x Blc. Dorothy Drury-Lane)

Materials

Greenhouse Materials

SHADING COMPOUND - An easily mixed compound producing a uniform shade that will come off with the first frost. Recommended mixture: Three pounds to one gallon of water for use in sprays. A thicker consistency is required for brush use.

5 lb. Ctn.	\$2.00
25 lb. Ctn.	7.50

HUMIDIGUIDE - Registers temperature and humidity. Size: 3-1/4" x 3-1/4". Plastic case.

Each	3.00
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ORCHID SPRAY - A DDT Rotenone compound to control scale, beetles, thrip, and other orchid pests.	8 Oz.	3.25
To be mixed one part spray to 400 parts water	Pint	4.50
and sprayed on the plants.	Quart	7.50

ORCHID POWDER - A DDT Metaldehyde compound for sow bugs, slugs, and snails. Apply to benches where pests travel.	1 lb. Pkg.	2.00
	2 lb. Pkg.	3.25
	5 lb. Pkg.	6.75
	10 lb. Pkg.	12.50

FOG TYPE SPRAY NOZZLE - Quality nozzle screw machined from solid brass. Creates a dense spray as fine as a mist. Actually breaks water into fog-like spray.	Each	1.95
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Cut Flower Materials

5" ORCHID TUBES AND CAPS	Ctn. of 250	7.50
	Doz.	.50

SHREDDED FLORAL-PAK - Used for packing flowers. Carton contains approximately 3 lbs. of material.	Ctn.	1.50
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INDUSTRIAL TAPE - Used to tape tubes to boxes. Roll 1" x 72 yds.		2.25
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Orchid Supplies

CLAY POTS - Standard, not slotted. All prices per dozen:

1-3/4"	-	.50	4"	-	1.10
2"	-	.60	5"	-	1.50
2-1/2"	-	.75	6"	-	2.40
3"	-	.80	7"	-	3.00
3-1/2"	-	.90	8"	-	4.20

POT STAKES - Galvanized Steel.	Per Dozen	.20
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POTTING STICKS - (One 9" and one 12") Tennessee hickory finished in natural shellac.	Pair	1.00
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GREEN FLORIST THREAD - Long life waxed thread for tying plants.	2 Oz. Spool	.50
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WHITE CELLULOID PLANT LABELS		
#22 Stick-in type (5" x 3/4")	Per Hundred	4.50
	Dozen	.60
#144 Stick-in type (1-3/4" x 3/4")	Per Hundred	2.10
	Dozen	.25
#16 Tie-on type <u>without</u> wire (4" x 3/4")	Per Hundred	2.75
	Dozen	.25

OSMUNDINE - We no longer supply osmundine. We recommend "St. Johns River Osmundine" which can be ordered direct from the source. Current prices are \$2.50 prepaid for a Hobby Bag and \$12.50 per bale, shipment collect. Prices subject to change without notice. Order direct from:

Branwood Osmundine Company
P. O. Box 2000
San Mateo, Florida

Order Handling

SHIPMENT - All orders are prepared carefully and promptly. Shipment is made as soon as possible after receipt. Domestic shipment is usually made in clay pots via Railway Express. We are prepared to make shipment in fiber pots upon request. Foreign shipment is made in fiber pots by air mail or air express.

CLAIM FOR DAMAGED SHIPMENT - We guarantee safe arrival of plants, provided the customer furnishes claim inspection reports from the transportation carrier in the event of damaged shipments. It is advisable to open plants in the presence of a responsible employee of the transportation company or post office. If plants are damaged, secure a signed inspection report immediately.

BACK ORDERS AND SUBSTITUTIONS - In the event we are permanently sold out of a cross when your order is received, you will be advised. If a second choice has been specified it will be shipped. If we are temporarily sold out of a cross you will be notified, your order will be back-ordered and the plants shipped when ready. No substitutions of a different cross will be made unless authorized by you. We prefer for our customers to specify a second and third choice in the event we are sold out of their first choice. If the size you order is not available we will, when possible, substitute a smaller size of the same cross, priced accordingly, or a larger size of the same cross at no additional charge.

PERMITS - Agricultural permits are required from Hawaii. All agricultural and customs requirements of other foreign countries must be complied with.

PRICES AND PAYMENT - Prices are subject to change without notice. Foreign shipments must be prepaid including transportation charges. All prices are f. o. b. Signal Mountain, Tennessee.

WARRANTY - We guarantee true representation of plants as described. We give no warranty, either expressed or implied as to the expectancy or productiveness of any of the plants. Our liability is limited to purchase price of plants and all plants are subject to prior sale.

Culture

Growing Orchids In The Home

This information is furnished for amateurs with no previous experience in growing orchids. Suggestions and instructions for growing orchids in the home are as many and as varied as recipes for roasting meat or making a cake; delightful results can be obtained even though the procedure may vary. The modern home with its well lighted rooms, sunporches, picture windows, automatic heat, and in many instances, air conditioning, lends itself well to the successful growing and flowering of various orchid plants.

TEMPERATURES

Orchids can be divided into three winter night temperature groups:

1. 65° to 70° NIGHT TEMPERATURE, WARM GROWING ORCHIDS. Small seedlings of all varieties of orchids, Phalaenopsis, certain Vandas, and many others thrive and grow well in this temperature.
2. 58° to 62° NIGHT TEMPERATURE, ORCHIDS REQUIRING INTERMEDIATE TEMPERATURES. The Cattleya genera of orchid which produce the lavender, white, and white with colored lip do their best in this temperature. These are the orchid blooms most generally seen in corsages.
3. 50° to 55° NIGHT TEMPERATURE, COOL GROWING ORCHIDS. Cymbidiums, Zygopetalums, certain varieties of Odontoglossums, some varieties of Dendrobiums, Vandas, and others, do their best in this temperature.

While the home is satisfactory for growing many varieties of orchids, we suggest that the beginner confine his first orchids to the intermediate type which do their best in a night temperature ranging between 58 to 62 degrees Fahrenheit. After some experience one can then try his luck at several varieties.

LIGHT

For best results place your orchid plants in the best lighted location in your home. Whether the best lighted room faces South, East, West or North, makes very little difference. During the extremely hot part of the summer it may be necessary to shield your plants by partially closing your venetian blinds or pulling your curtains. In most sections of the United States the intermediate type orchid will not require shading from the first of November through March 15.

HUMIDITY AND WATERING

To provide adequate humidity your plants should be set on approximately 2-1/2" of one-quarter or one-half inch gravel, rock, or pebbles. The pebbles should be placed in a water-tight flat tray or saucer-like container. One-half inch of water should be kept in the graveled bottom of the container at all times. Water should never cover the top of the container. Container suggestions: ordinary 2-1/2" to 3" white enamel or aluminum roasting pan, rectangular or circular jardiniere or copper planter. Your orchid should be watered with one-half pint to a pint of water every seven days and no more. It is unnecessary to water the foliage. Leaves should be cleaned with a damp cloth once or twice a year.

REPOTTING

Your first orchids should be well established plants which should bloom within one to three months. Unless you have had considerable experience you should acquire a *Cattleya* species or hybrid in the \$5.00 to \$25.00 class. As you gain experience, your collection can be enlarged to include the more expensive exhibition plants.

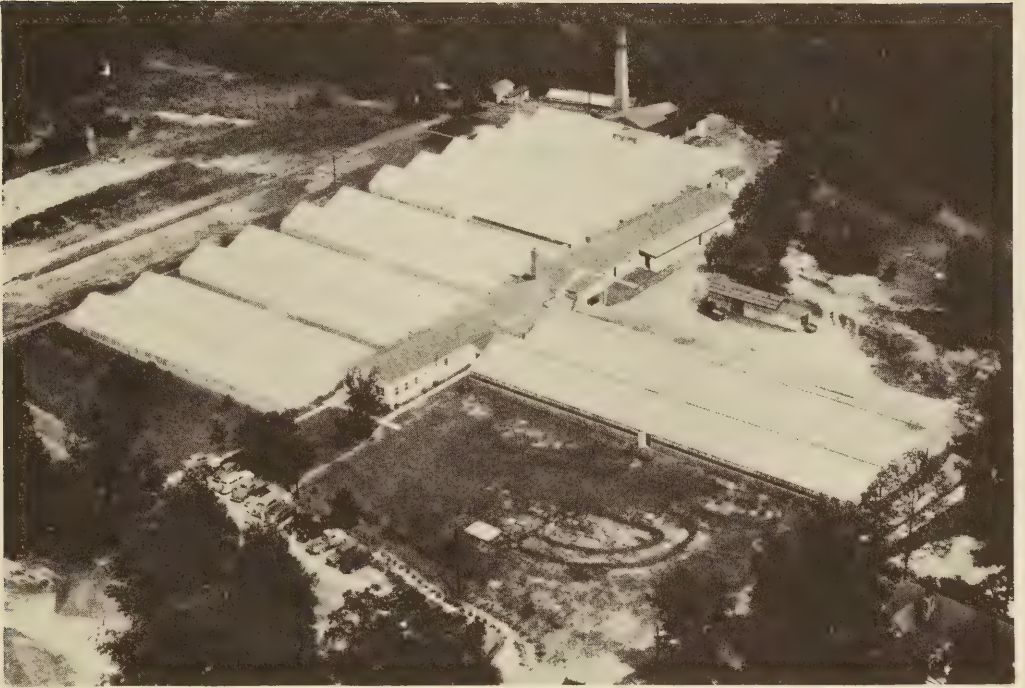
BEGINNING YOUR COLLECTION

Your orchid plant will need potting when it grows over the edge of the pot. This can be accomplished at home by securing special material called "osmundine fiber." For your first orchid it is suggested that you acquire one that will not need repotting for a year to eighteen months.

The cultural brochure that follows is for advanced growers who have had some experience and newcomers who want to begin with scientific information.

Rivermont
O R C H I D S
SIGNAL MOUNTAIN, TENNESSEE

Orchid Culture



"Prepared in collaboration with Dr. Gavino Rotor, Jr.,
Department of Floriculture and Ornamental Horticulture,
Cornell University."

Rivermont
O R C H I D S
SIGNAL MOUNTAIN, TENNESSEE

In this discussion we answer a few basic questions about orchid culture by briefly discussing the most important factors of the environment that influence the growth of orchids. Since climatic conditions vary a great deal from place to place and at different times of the year, specific instructions are inadvisable. Rather, it would profit the grower to gain an idea of how various factors affect plant growth and how they are related to each other. Thus, he will be able to act intelligently, to analyze any problem that may arise, or to interpret any recommendation as they apply to his own situation.

Repotting is specifically described to serve as a guide for beginners.

Reference may be made to some of the fine books on orchid culture listed in our bibliography.

Water

Water is used by plants in the manufacture of plant food, in transporting the food to various parts of the plant, and to keep the plant erect by making the cells turgid. One can very well imagine what would happen if a condition of water deficiency should occur. The cell walls would lose their rigidity, leaves and pseudobulbs would become shriveled, and the manufacture and transport of food would cease. Growth and development would be slowed down considerably and eventually cease.

Roses, chrysanthemums and many other garden plants wilt as soon as water becomes unavailable. With Cattleyas, on the other hand, the effect of insufficient water is not immediately obvious, although internal changes may have occurred. The effect of lack of water is not immediately shown by the succulent and much-thickened pseudobulbs and leaves. Drying the osmundine thoroughly between applications of water could actually be harmful to the growth of Cattleyas.

Most of the water loss from plants is lost through transpiration. Transpiration simply means the loss of water from plant tissues in the form of water vapor. In determining the frequency of watering, the factors affecting transpiration should be considered. These are discussed in the following pages.

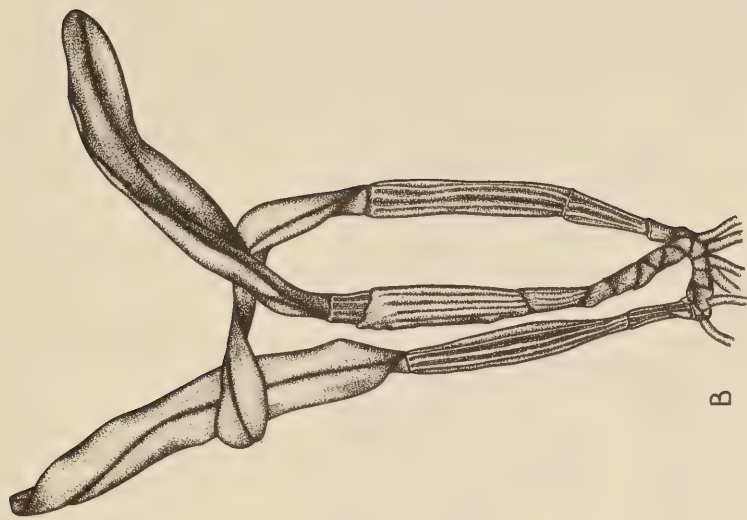
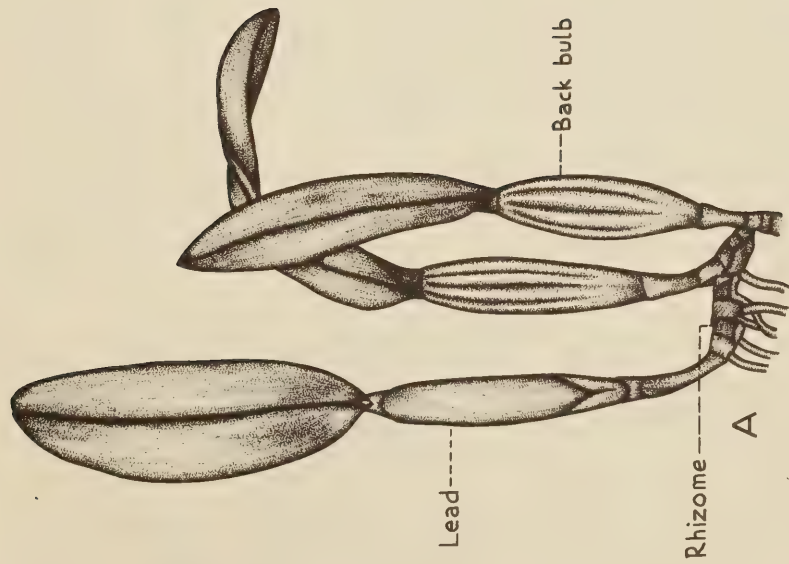


Fig. 1.

- A. Cattleya plant with hard, turgid pseudobulbs and leaves.
 B. Cattleya plant with weak, shrivelled and soft pseudobulbs and leaves.

Temperature and Light Intensity

IN RELATION TO TRANSPIRATION. Excessive light intensity raises the temperature of the plants thus increasing the loss of water from the leaves. If the rate of water loss is faster than the rate of water intake through the roots, the plant will wilt. We see here the danger of drying plants between waterings especially under conditions of high light intensity.

When the sun is shining on the leaf, the leaf temperature is raised above that of the surrounding air and plants lose water to the atmosphere even when it is saturated with moisture (100% relative humidity). This is a proven and accepted fact. Obviously, the best way to cut the excessive loss of water from the plant is to cool the leaves and the house so that there would not be much difference between their temperatures. One way of doing this is to increase humidity by spraying water over the plants, the walks and benches. It has been found, however, that increasing the humidity in this manner cools the house for less than 30 minutes. The effect is so temporary since the water on the leaf surfaces soon evaporates and the atmosphere itself gets dry again, especially when there is good air circulation. Furthermore, so long as the leaf receives light, its temperature will always be higher than that of the surrounding air and hence, the plant will continue to lose water regardless of humidity.

Shading prevents the sun's rays from striking the leaf and cools the house, reducing the difference between the leaf and the house temperatures throughout the day. Shading, therefore, is a more effective way of reducing water loss than increasing humidity.

Spraying water is not only ineffective but a good way of spreading diseases. High humidity and high temperature together create a condition that is ideal for the growth of many destructive fungi and bacteria.

IN RELATION TO GROWTH. Within certain limits and providing other factors as water, light, etc., are sufficient, a rise in temperature usually increases food production, respiration and rate of growth.

The energy necessary for growth is given off in respiration, a process which uses the food manufactured by the plant. If little food is available, it is used up in a short time and growth ceases. This situation is aggravated by low light and high temperature. A plant may not grow at 40° F. because of the very low rate of

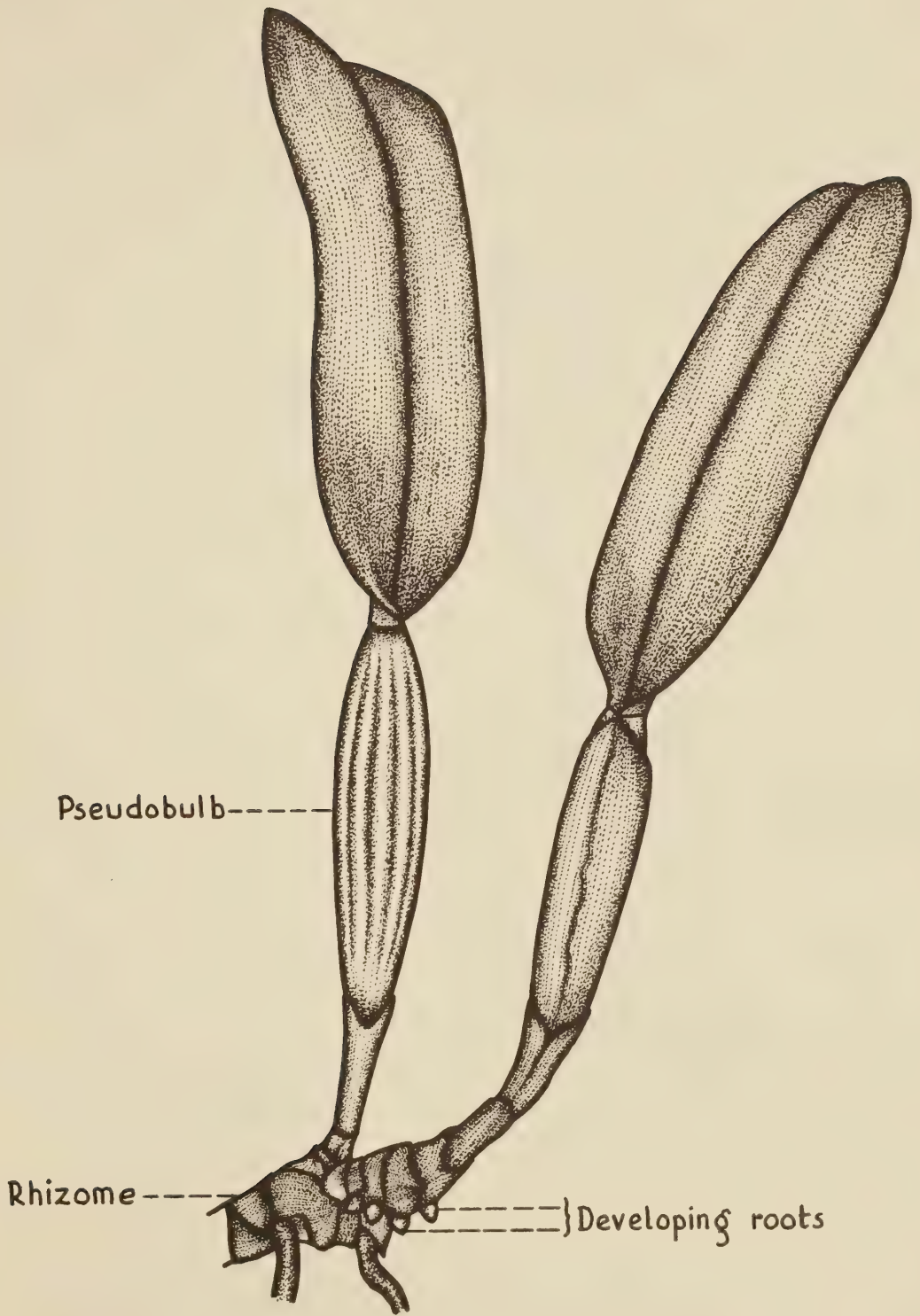


Fig. 2.

The stage of developing roots when the plant is ready for repotting.

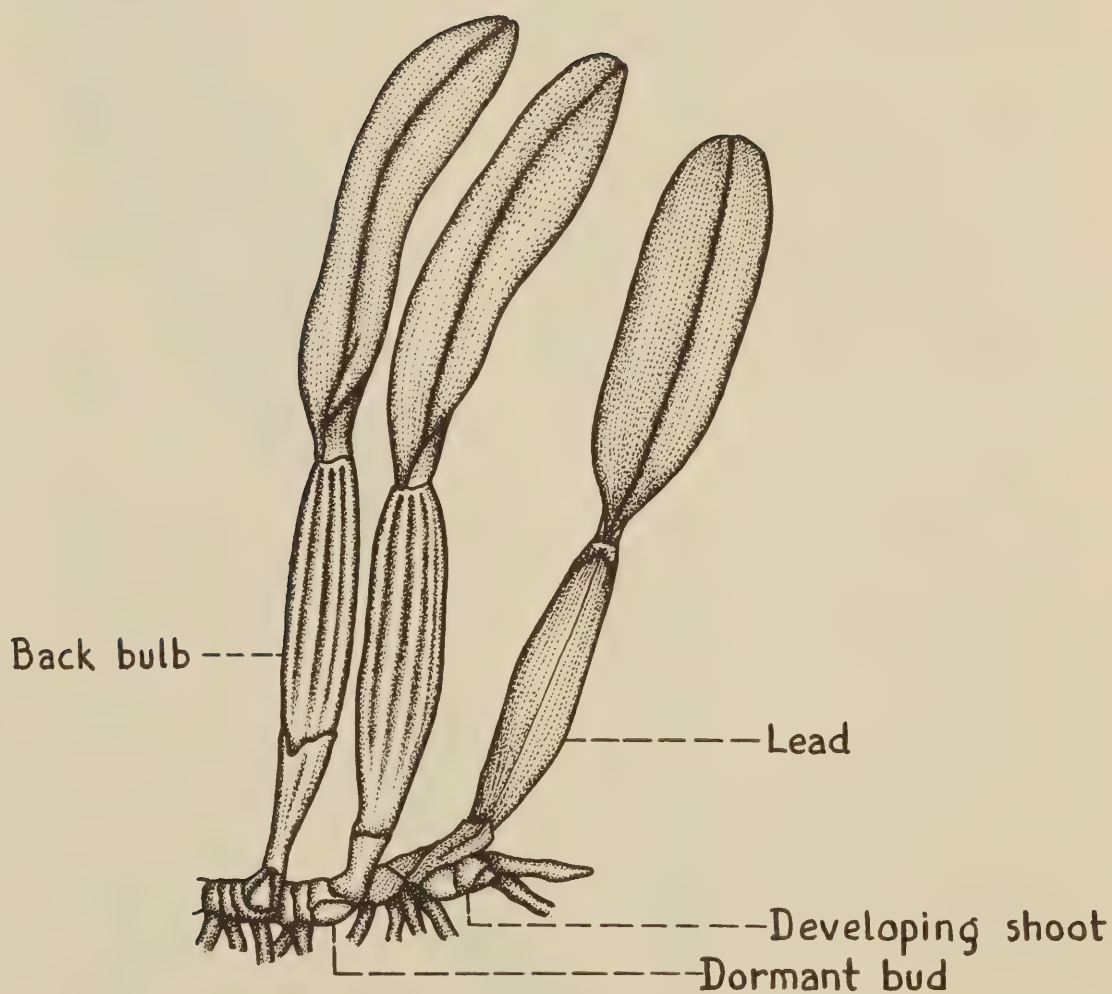


Fig. 3.

A *Cattleya* plant with dormant buds and a developing shoot.

respiration at that temperature. A cool house orchid may not survive at 80° F. because it may respire so fast that the process of food synthesis cannot keep up with the rate of respiration. If the night temperature is too high during periods of poor light intensity, growth becomes weakened, the flowers are small and dark-colored flowers become pale.

Generally, Cattleyas grow well with a minimum night temperature of 60° F. or within a range of 58° to 65° F. Most growers keep the day temperatures five to ten degrees above the night temperature during cloudy days and from ten to fifteen degrees higher during bright days.

Light is necessary in the manufacture of food by plants. Aside from other factors, there must be sufficient light for maximum food production.

Many orchid growers have a tendency to shade Cattleyas excessively. This practice keeps down food production and slows growth. A very low light intensity is especially detrimental at high temperatures. Such temperatures are conducive to rapid respiration and what little food is synthesized in the plant under conditions of poor light is rapidly used in respiration. Cattleyas receiving too little light have small, thin and weak pseudobulbs. The leaves are thin, flop over and sometimes do not expand fully. Increasing the light intensity not only promotes a strong, vigorous top growth but also improves root growth; food production is stimulated and more food becomes available for the proper development of both top and roots. The amount of stored food influences flower production and the size, color, and texture of the flowers.

Very high intensities, on the other hand, can reduce the amount of chlorophyll in plants. Chlorophyll is the substance that is responsible for the green coloration of plants and which enables a plant to manufacture food. With Cattleyas, too much light results in yellowing of leaves.

REGULATING THE LIGHT INTENSITY. Removing shade from the glass in winter helps the plants to utilize all available light. The shading material ordinarily used is easily washed off by rains so that by winter there is hardly any left. Scrubbing may be necessary where a more permanent type of shade has been used, as

lime and salt with oil, or white lead with gasoline. There are several products on the market for cleaning glass.

In the home the maximum amount of light can be obtained from south windows, and Cattleyas will grow well in this situation.

In most areas, shading is necessary in summer. An adjustable shading system is the best way of getting the desired light intensity. Some of the materials that may be used are Venetian blinds, roller lath shades on runners a foot above the glass, or cheesecloth with eyelets so that it may be drawn over the plants on bright days and pulled back on cloudy days.

Shading compounds as white lead and gasoline may be sprayed on the glass. However, this compound is difficult to remove. We recommend our special Rivermont shading compound.

REGULATING THE TEMPERATURE. Heating and ventilation are the most important methods of keeping the temperature within the desired limits. Oil, natural gas, or electricity are popular sources of fuel. The most economical heating can be obtained by the use of hot water.

Thermostatic controls in both heating and ventilation can be very practical. Their use has helped the grower who has to be away during most of the day. On bright days, direct solar heat and radiation cause the temperature to rise in the house. The heat should, therefore, be turned off or the ventilators opened. In winter, care should be taken to prevent cold air from rushing in. Ventilators should be opened on the leeward side.

Potting

A Cattleya plant needs repotting when: (1) it has outgrown its pot; (2) the osmundine has decayed to a point where it starts to fall apart (indicated by its readily breaking off when a pinch is taken between the fingers.) These two conditions are ordinarily reached after two years. When a plant has to be repotted, it is best to wait until one or two roots start to develop from the base of the lead.

Select a pot large enough to permit growth of two successive



Fig. 4.

A mature *Cattleya* plant properly divided.

growths when the butt of the plant is placed against the edge of the pot.

REPOTTING SEEDLINGS FROM COMMUNITY POTS. For repotting these seedlings 1-3/4" and 2" pots are suitable. Run a dull knife all around the inside surface of the pot and lift out the ball of osmundine with all the seedlings. Separate the individual seedlings, carefully avoiding breaking the roots. Trim all the broken root ends and place a piece of peat on each side of the plant, with the top of the peat slightly covering the base of the plant. Next, insert the plant with the osmundine in the pot using a small potting stick, and pack more osmundine around the plant. Do not pack hard but just firm enough to hold the plant in place under all circumstances. When finished, the osmundine surface should be level and about 1/8" from the top of the pot.

REPOTTING OLDER SEEDLINGS AND FLOWERING-SIZE PLANTS
The plant with the osmundine is lifted out of its pot as previously described above. Next, trim the plant, cutting all of the dead roots and dead or diseased pseudobulbs. Old, but healthy back bulbs may be removed for propagation purposes; leave at least four or five mature bulbs with the lead. Shake out or remove all of the decayed osmundine. Fill one-third of the pot with pieces of broken crock. Hold the butt of the plant against the edge of the pot and place small pieces of osmundine next to the plant in such a way that the rhizome is slightly and not completely buried in the osmundine. Work in more and more pieces of osmundine until the plant is very firmly held in place. The surface of the osmundine should be about three-fourths of an inch below the top of the pot. This makes watering easier.

CARE OF THE PLANTS AFTER REPOTTING. Water the osmundine once thoroughly and place the newly-potted plants in a shady location until the roots grow out; never allow the osmundine to dry out completely. The frequency of watering, as previously pointed out, depends on various factors. The plants may be given normal light as soon as they are established.

Bibliography

ORCHIDS: THEIR DESCRIPTION AND CULTIVATION

Charles H. Curtis, Putnam & Co. Ltd.

42 Great Russell St., London

4 Pounds, 4 Shillings.

ORCHIDS ARE EASY TO GROW

H. B. Logan and L. C. Cosper

Ziff-Davis Publishing Co., Chicago-N. Y., \$6.00

HOME ORCHID GROWING

Rebecca T Northern

D. Van Nostrand Co., Inc., \$6.50

A. B. C. of ORCHID GROWING

John V Watkins

Ziff-Davis Publishing Co., \$3.00

AMERICAN ORCHID CULTURE

Edward A. White

A. T. De LaMare Co., N. Y.; \$6.00

ORCHIDS AND HOW TO GROW THEM

Adelaide C. Willoughby

Oxford Printing Co.; \$3.50

YOUR FIRST ORCHIDS AND HOW TO GROW THEM,

Published by the Oregon Orchid Society, Inc., \$1.00

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